Montana Department of Environmental Quality

Enforcement Division

STANDARDIZED CLEANUP REPORT FOR SPILLS OR RELEASES THAT IMPACT SOIL

The Enforcement Division (ENFD) of the Montana Department of Environmental Quality (DEQ) oversees the cleanup of spills or releases of hazardous or deleterious substances, including petroleum products that do not require long-term remediation. This document was developed to aid consultants and responsible parties in providing ENFD with a Standardized Cleanup Report (Report) to facilitate consistent and timely closure of spills and releases.

ENFD applies DEQ's Tier 1 Risk-Based Corrective Action (RBCA), Risk-Based Screening Levels (RBSLs) when evaluating petroleum release or spill sites for closure. DEQ's RBCA documents are available at: http://deq.mt.gov/lust/rbca.mcpx. In addition, ENFD utilizes DEQ's Petroleum Technical Section, Technical Guidance Document #7, which is available at: http://deq.mt.gov/LUST/TechGuidDocs/techguid7.pdf.

ENFD uses U.S. Environmental Protection Agency's (EPA) Region IX Regional Screening Levels (RSLs) for calculating site-specific levels of spills or releases of other chemical (non-petroleum) products. EPA Region IX RSLs can be found at: http://www.epa.gov/region9/superfund/prg/.

The cleanup requirements of a non-petroleum spill or release should be discussed with the ENFD project manager before any remedial activity is conducted. DEQ has developed a flowchart that is useful in screening soils for contaminants of potential concern at release or spill sites. The flowchart, Attachment C, is available at: http://deq.mt.gov/StateSuperfund/VCRA_Guide/ss_flowchart.pdf.

It is recommended that the responsible party or environmental consultant discuss the sample collection methodology or sampling plan with the ENFD project manager prior to initiating assessment or remedial activities.

At a minimum, all assessment and remedial activity information should be provided as outlined in the following ENFD Standardized Report Format and submitted to ENFD so the project manager can evaluate compliance with applicable laws and rules, and determine what further actions are warranted or if "no further action" is appropriate for the spill or release site. ENFD feels that it is appropriate that the final Report discussing assessment and remedial actions be submitted within 90 days from the date the release or spill occurred.

Please note that other DEQ programs and other state agencies may have different report requirements.

ENFD Standardized Report Format

1. Introduction

The Report should provide a brief summary of events surrounding the incident that caused the release or spill, including a description of and the accurate volume of the material spilled or released and a detailed description of how the volume was determined. The Report should also provide the name, mailing address, and telephone number of:

- The responsible party;
- The contact person if different than the responsible party;
- The person submitting the Report; and
- Any landowner whose property was impacted as a result of the release or spill.

2. Site Description

Provide an accurate description of the incident location. The following information should be Included:

- Incident site street address, city, and county where the incident is located. If the incident occurred on a highway, road, etc., provide the road name and reference the nearest mile marker.
- Incident site Township, Range and Section.
- Incident site latitude and longitude coordinates. The coordinates should be reported in **decimal degrees** and contain no more than five decimal places (e.g., 46.12345, –114.12345). Include a discussion on how the coordinates were acquired.

3. Site History

Provide a brief site history if the incident occurred at a residence, business, or facility. Site history isn't required if the incident occurred along a roadway or vacant field. However, a discussion on the land use should be provided, e.g., ranching or agriculture operation, or if it is in an active oil field. If the incident occurred in an active oil field, provide the proper name of the oil field. This information can be obtained by either contacting the Montana Board of Oil and Gas at (406) 656-0040 or online at: http://www.bogc.dnrc.mt.gov/WebApps/DataMiner/

4. Hydrogeologic Conditions

a. Geology

Provide a discussion on site geology, including a description of geology encountered, e.g., soil and/or rock types, and lithology. In addition, soil boring logs should be provided if available.

b. Hydrology

Provide a discussion of site-specific ground water and surface water information to the extent known. Include well depth, static water level, location, and use of any wells located in close proximity (1/4 mile) to the site location. The distance to the nearest surface water body and ground water well, regardless of use, should be provided. A discussion on surface gradient and assumed ground water flow direction should also be provided. Well logs may be available from the Montana Bureau of Mines and Geology Ground Water Information Center on their website at: http://mbmggwic.mtech.edu/

The depth to ground water is determined using the measured static water level in ground water wells located within 500 feet of the release or spill. If ground water data within 500 feet is unavailable, or it is extraordinarily difficult to obtain ground water information, describe the difficulty obtaining the information and apply the most conservative RBCA, RBSL. Ground water information is not required if the most conservative RBCA, RBSLs are applied to the site and residual contaminant concentrations do not exceed the RBSLs.

5. Assessment, Remedial, and Sampling Activities

Provide a detailed description of assessment and remedial activities, including the following:

- A description of soil removal activities including the final dimensions of all excavations. If the depth of the excavation is greater than two feet, it is considered subsurface contamination and requires that the lateral, as well as the vertical, extent and magnitude of contamination be defined. **Note:** ENFD requires that soil samples be collected from the excavation sidewalls if the depth of the excavation exceeds two feet.

- A description of field screening methods, if applicable. The description should include:

    - Type, make and model of equipment used;
    - Calibration procedures used and type of calibration standard;
    - Date and time of last calibration [**Note:** most field screening instruments should be calibrated daily and under the same ambient conditions where screening takes place]; and
    - Method used and field screening results. If heated headspace is used as a field screening method, a description of the procedure is required. The field screening results should be presented in table form. **Field screening analysis is not adequate for site closure.** Laboratory sample analysis is required and the sample analytical results, from a DEQ-approved laboratory, should be provided in the Report. DEQ's approved analytical laboratory list is available at: http://deq.mt.gov/LUST/downloadables/lablist/APPROVEDLABLIST.pdf

    - A description of sample collection activities, including the sample collection methodology, sample collection location, and the depth where each sample was collected. See ENFD Soil Sampling Guidelines at: http://deq.mt.gov/enf/Reports/Soil_Sampling_Guidance_10-2013.pdf

- A description of assessment activities to define the lateral and vertical extent of contamination. The extent and magnitude of a release or spill is defined when the investigation, through laboratory data obtained from samples collected from excavations, test pits, or soil borings, etc., demonstrates that the contamination is attenuating both horizontally and vertically to where there are no RBCA, RBSL exceedances.

- A description of contaminated soil disposal, including receipts identifying where and how much contaminated soil was disposed. Note: Petroleum hydrocarbon-contaminated soil is a Group II waste requiring disposal at a permitted solid waste disposal facility. The solid waste disposal facility should be contacted prior to initiating remedial activities to obtain its requirements for waste profiling and disposal. For information on licensing a one-time landfarm, contact DEQ's Solid Waste Program at (406) 444-5300. Additional information on one-time landfarms is also available at: http://www.deq.mt.gov/SolidWaste/newapplications/onetimeLandfarm.pdf

6. Sample Analytical Results

Provide a discussion of the laboratory analytical methods and the sample analytical results. See Page 6 for soil sample analytical requirements. The sample analytical results should be summarized in a table that includes, at a minimum, the sample identification number, applicable RBSLs, and the sample collection date and time.

The sample identification number should correspond to the sample identification number provided on the chain of custody (CoC) and laboratory data report. See Page 7 for examples of sample analytical tables.

The complete laboratory analytical data package must be provided with the Report, including the CoC, sample receipt checklist or other document that provides the sample temperature when received at the laboratory. Samples that arrive at the laboratory with a sample temperature greater than 4^{o}C may result in ENFD invalidating the sample analytical data.

7. Summary

Provide a brief summary of assessment and remedial activities and a discussion of sample analytical results if the remaining petroleum hydrocarbon concentrations are greater than 200 PPM total extractable hydrocarbons or above the applicable RBCA, RBSLs.

8. Conclusions and Recommendations

Provide conclusions based on sample analytical data in comparison with the applicable RBCA, RBSLs or RSLs. Provide recommendations for additional assessment or remedial activities or closure with a discussion and rationale for supporting the recommendations. The conclusion and recommendations should be based on sample analytical results, ground water information, or other site-specific information. If site closure is recommended, a justification must be provided to ENFD. Reporting that the petroleum hydrocarbon-impacted soils left in place are below RBCA, RBSLs or RSLs is not sufficient. The lateral and vertical extent of the contamination must be defined and the volume of impacted residual soils must be quantified.

9. Site Maps

The following types of maps should be provided in the Report:

a. A general site location map. The map can be a USGS 7.5 Minute Quadrangle map, road map, or an aerial photograph. All maps should have the incident location clearly identified. The Montana Natural Resource Information System website has topographic maps and aerial photographs available at: http://maps2.nris.state.mt.us/mapper/

b. A site map showing location of roads, buildings, waterways, etc. It is recommended that this map be drawn to scale. The location of the release or spill should be clearly identified on the site map. This map should include a north arrow, map scale, and all pertinent site features clearly labeled.

c. A sample collection location map. This map should show the excavation outline with approximate sample collection points identified and labeled with the corresponding sample identification number. If the excavation depth is greater than two feet, a cross section of the excavation sidewall with sample collection locations is required. The sample collection map does not have to be to scale, but the actual excavation dimensions should be included in the Report text.

d. A ground water elevation map (if applicable).

10. Photographs

The Report should contain a photographic log documenting assessment, remedial, and sampling activities. A description of the photograph and the direction (view) the photograph was taken should be provided.

ENFD is now accepting submittal of the Report as a PDF file in either electronic or digital formats. Reports that are less than 5 megabytes can be emailed to the ENFD project manager. All Reports larger than 5 megabytes should be submitted on a compact disc or flash drive with the project name and project location identified on the disc or accompanying cover letter.

ENFD requests that consultants notify the ENFD project manager via email or telephone of the pending disc or hard copy submittal.

The final Report should be submitted to the ENFD project manager via email or at the following address within 90 days from the date the release or spill occurred:

Enforcement Division
Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901
(406) 444-0379

ENFD project manager email addresses are located at: http://deq.mt.gov/enf/contacts.mcpx

If you have any questions about this document, please contact ENFD at (406) 444-0379.

Soil Sampling Requirements

Table A- Testing Procedures for Soils

Petroleum Product	VPH	EPH Screen	EPH Fractionation	EPH for PAHs	RCRA Metals	EPA Method 8260B	Oxygenates & Lead Scavengers
Gasoline/Aviation Gasoline	R						SS
Diesel (#1 & #2)	R	R	X				
#1 - #2 Heating Oils	R	R	X				
#3 - #6 Fuel Oils		R	X	SS			
Used/Waste Oil	R	R	X	SS	R	R	SS
Kerosene, Jet Fuel (Jet-A, JP-4, JP-5, JP-8, etc.)	R	R	X				
Mineral/Dielectric Oils		R	X				
Heavier Wastes		R	X	SS			
Crude Oil	R	R	X	SS			
Unknown Oils/Sources	R	R	X	SS	R	R	SS

R- Required analysis
X - Analysis to be run if the EPH screen concentration is >200 ppm TEH
SS- Site specific determination.

Example Tables

Extractable Petroleum Hydrocarbons
Laboratory Analytical Results

Sample No.	Sample Date/time	Sample Depth and Location	EPH Screen Results mg/kg	TEH mg/kg	C9-C18 mg/kg	C19-C36 mg/kg	C11-C22 mg/kg	Naphthalene mg/kg
RBCA RBSLs	**6/10/12 1400**	**Residential <10 feet to groundwater**	**200**	**NA**	**2,000**	**100,000**	**400**	**9**

Volatile Petroleum Hydrocarbons
Laboratory Analytical Results

Sample No.	Sample Date/time	Sample Depth and Location	TPH mg/kg	C5-C8 mg/kg	C9-C10 mg/kg	C9-C12 mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Methylbenzene mg/kg	Xylenes mg/kg	Naphthalene mg/kg
RBCA RBSLs	**6/10/12 1400**	**Residential <10 feet to groundwater**		**200**	**1,000**	**100**	**0.08**	**0.04**	**10**	**10**	**200**	**9**